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ABSTRACT

Significant improvements in instructional design and in the development of classroom support materials, as well as the blurring of lines separating computer software, computer-interactive videodisc, CD-ROM, and other new technologies, are cited as the rationale for combining three topics covered by separate guidelines published in 1991--educational software, computer-interactive videodisc, and CD-ROM--in this single set of revised guidelines. They are meant to provide a model to be used in the design and development of new interactive technology resources as well as for the evaluation of these resources for use in California schools. Evaluative criteria in each section are organized into three categories: essential criteria (minimum criteria that must be met for consideration); desirable criteria (goes beyond minimum requirements and also meets additional criteria, rated as recommended for use); and exemplary criteria (goes beyond essential and desirable and embodies additional attributes, rated as highly recommended for use). Evaluative criteria are grouped in check list format under the five headings of Curricular Match, Instructional Design, Content, Interest, and Technical Quality. Subheadings are used as appropriate for more specific groupings of criteria. A copy of "Standards for Evaluation of Instructional Materials with Respect to Social Content" (1986, California State Department of Education) and a statement of "Consumer Awareness Issues" conclude the handbook. (BBM)

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Technology in the Curriculum

CALIFORNIA INSTRUCTIONAL VIDEO CLEARINGHOUSE
CALIFORNIA SOFTWARE CLEARINGHOUSE

Guidelines for Interactive Technology Resources in California Schools

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ACKNOWLEDGEMENTS

These revised guidelines for interactive technology resources to be used in educational settings are based on the *1991 Guidelines for Educational Software in California Schools, 1991 Guidelines for Computer-Interactive Videodisc in California Schools,* and *1991 Guidelines for CD-ROM in California Schools.* They are meant to provide a model to be used in the design and development of new interactive technology resources as well as for the evaluation of these resources for use in California schools. The guidelines were developed originally by the educators listed below, most of whom also contributed to the current version.

We also appreciate the helpful comments and suggestions received from the many publishers and producers of interactive resources who took time to share with us their responses to these guidelines while they were still in draft form.

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We are fortunate indeed to have had LeRoy Finkel's input on these new guidelines before he became ill last year. As always, his comments and suggestions were both critical and helpful. His was a voice for excellence that could challenge both developers and users to expect better programs, but still remain grounded in the reality of what is possible. He also kept a sharp focus on the ethical implications of copyright issues. The concept of the combined guidelines that we have adopted was supported by LeRoy and this document has been strengthened by many of his recommendations.

Finally, special thanks are due to Bev Hamilton and Bev Krieg for their careful editing of these guidelines, and to Bev Krieg for designing the new format and producing the final document.

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INTRODUCTION

We are well into our second decade since microcomputers were introduced into California classrooms. The capabilities of the software and hardware have increased dramatically. Significant improvements have been made in instructional design and in the development of excellent classroom support materials. New computer-interactive videodisc and CD-ROM technologies, digitized video, and other exciting developments have expanded the horizons of what is possible.

It is apparent today that the lines separating computer software, computer-interactive videodisc, CD-ROM, and other new technologies are blurring rapidly. This seems, therefore, to be an appropriate time to update and combine the guidelines now being used to evaluate interactive technology resources in California's schools in order to produce one set of guidelines applicable to all of the existing and emerging technologies.

Evaluative Criteria

The evaluative criteria in each section are organized into the three categories that were established originally for the rating of computer software programs in California in 1985. These categories are:

- *Essential* Criteria
  The *Essential* criteria should be met by any program used in an educational setting, and must be met in order for a program to be accepted for evaluation by the California Clearinghouses.

- *Desirable* Criteria
  If the program goes beyond the minimum *Essential* criteria and also meets all or most of the criteria listed in this section, it is rated as *Desirable* and will be recommended for use in California schools.

- *Exemplary* Criteria
  A program that meets the criteria listed as *Essential* and *Desirable* and goes beyond these to embody many of the attributes described in this section is rated as *Exemplary*. These programs are recommended highly for use in California schools and also stand as models for new development.

Organization of the Guidelines

These new, revised guidelines follow the format first developed in 1985 and updated in 1991. Evaluative criteria are grouped under the five headings of Curricular Match, Instructional Design, Content, Interest, and Technical Quality. Subheadings are used as appropriate for more specific groupings of criteria.

The placement of Curricular Match as the first section is deliberate. All technology resources recommended for use in California schools must align with the content and philosophy of the appropriate California curriculum framework. All evaluators must be familiar with the framework for the subject area being evaluated. The quality of the Instructional Design and closeness of the Curricular Match are of paramount importance in all of our evaluations. Excellence in technical quality is expected, but that alone is not enough to recommend any program for use in California schools.

An important subheading of the Instructional Design section is that of Teacher Support. California educators have come to expect excellent instructional support materials as part of any technology package. These materials should go far beyond simple directions for installation and use, or a few suggested activities. No program, however excellent and innovative, can receive California's highest rating of *Exemplary* unless accompanied by a well-designed, creative, and solidly curriculum-based teacher's manual.

Most of the criteria are deemed applicable to all of the interactive technology resources. A few specific criteria may apply only to CD-ROM or computer-interactive videodisc programs and these are indicated by the letters CD or CIVD in the box adjacent to the criterion. Teachers who evaluate software submitted by publishers use forms that are based on these guidelines. These forms are available from the Software Clearinghouse.

A separate but equally important part of every evaluation is based on the *Standards for Evaluation of Instructional Materials with Respect to Social Content* published by the California Department of Education in 1986. Technology resources recommended for use in California schools must comply with all of the requirements listed in these "Legal Compliance" guidelines. They are summarized near the end of this document.

The challenge of meeting the unique needs of limited-English-proficient students with excellent technology resources prompted the development of two evaluation documents: *Guidelines for the Evaluation of Subject-Matter Technology Resources for LEP Students* and *English as a Second Language Instructional Materials Evaluation Criteria* (California Department of Education, 1989). The first document is available from either of the Clearinghouses and the second from the California Department of Education.

Educators also make effective instructional use of application software such as word processors, databases, spread sheets, graphics generators, and telecommunications software. As students become skilled users, the applications software can support instructional activities in all areas of the curriculum. Many relevant evaluative criteria for these types of programs can be selected from appropriate sections of the basic guidelines. More specific evaluation criteria for applications software may be requested from the Software Clearinghouse.

Summary

These revised and updated guidelines reflect our higher expectations based on current educational philosophy and the capabilities of today's technology. As the power of the computer hardware and the capability of the software continue to evolve, so will California educators continue to raise their expectations of what is to be recommended for use in our classrooms.

In addition to assisting educators in the selection of high-quality interactive technology resources, these guidelines also are intended to define criteria of excellence that can provide suggested directions for those publishers and producers who strive constantly to improve their products. We want the best that can be made available for use with our students.

The guidelines will be used to evaluate new interactive technology resources being used by California educators for scores of different tasks and in a variety of settings. They can assist educators in making informed choices. As always, however, it is the role of the professional educator to decide when technology resources can be the most effective tool for the task at hand and to select the program that is most appropriate.

Finally, it should be noted that use of the term "guidelines" is intentional. Without concrete evidence of the success of using particular programs to reach specific educational objectives, it is impossible to know with certainty whether any technology resources really are *Desirable* or *Exemplary*. The teacher is an essential part of the educational process and different teachers may use the same program with varying degrees of effectiveness. A high rating is not a guarantee of successful use. But in our evaluations, we must not confuse our expectations of teachers with our expectations of the technology resources.

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Guidelines for Interactive Technology Resources in California Schools

CURRICULAR MATCH

Essential

☐ The content supports specific curriculum objectives as stated in the California curriculum frameworks.

Desirable

☐ The content supports one or more instructional themes/goals/strands specified in the California curriculum frameworks.

Exemplary

☐ The content integrates instructional themes specified in the California curriculum frameworks.

☐ Teacher support materials provide coorelations to the California curriculum frameworks.

☐ Teacher support materials provide correlations to widely used textbooks.

☐ There are curriculum-related sequences, lesson plans, or other materials ready for teacher use.

INSTRUCTIONAL DESIGN

PROGRAM DESIGN

Essential

- ☐ The cost of the program appears to be reasonable in relation to the instructional value.
- ☐ The program represents an effective use of technology-based instruction.
- ☐ The program design is pedagogically sound.
- ☐ The instructional design is based on effective learning strategies.
- ☐ The instructional design takes into account current research on thinking and learning.
- ☐ The main objectives are readily identifiable and are stated clearly.
- ☐ Appropriate use of the program can assist in the attainment of the stated objectives.
- ☐ The program enhances the teacher's ability to explain difficult concepts.
- ☐ The program enhances the student's ability to discuss and understand difficult concepts.
- ☐ The learner is actively engaged in attaining program objectives.
- ☐ The instructional level is appropriate for stated audience.
- ☐ There is a consistency between the content of a lesson and the way it is presented that is appropriate for the skill level of the learner.
- ☐ Program content follows a logical development and organization.
- ☐ Sequencing of content is varied appropriately for repeat users.
- ☐ Responses to learners are supportive, appropriate, and are not demeaning or ego threatening.
- ☐ Responses to learners are not highly repetitive.
- ☐ Sound can be controlled by the teacher or the learner except when it is an essential element of the instructional strategy.

Desirable

- ☐ Help screens are clearly and effectively written.
- ☐ On-screen help produces context-specific instructions.
- ☐ There are varied instructional strategies and multiple paths for attaining program objectives, with appropriate and effective branching in response to user input.
- ☐ The learner is involved in a high degree of interaction.
- ☐ When appropriate, the program design promotes problem solving and the development of higher order thinking skills.
- ☐ Given limited teacher instruction, students can begin using the program effectively and independently in a short period of time.
- ☐ The program is adaptable to a variety of teaching and learning styles.
- ☐ When appropriate, the program contains multiple levels of difficulty which may be selected by the learner or the teacher.
- ☐ When appropriate, the program provides insight to a solution or other help in responding to learner errors.
- ☐ When appropriate, the program presents harder or easier content in accordance with the learner's responses.
- ☐ Controls set by the teacher cannot be changed by students.

Exemplary

- ☐ Any tutorials are accessed and exited easily.
- ☐ Any tutorials are logically organized, understandable and helpful.
- ☐ Ideas, concepts, and theories are presented in a manner that promotes a deeper and/or broader understanding of concepts than would be possible with more traditional instructional materials alone.
- ☐ Alternative exploration, open-ended questioning strategies, the use of critical thinking skills, and independent investigation are encouraged by a variety of creative approaches.
- ☐ Users can click on key terms to hear their pronunciation and see a definition.

PROGRAM DESIGN (continued)

Essential	Desirable	Exemplary
☐ A record-keeping component, when included, is easy to set up and operate.	☐ When appropriate, word lists, problem sets, etc., can be customized by the teacher. ☐ When appropriate, the program includes the capability of printing instructional segments, performance records, learner-created materials, etc.	
☐ Any game format utilized for instruction, reinforcement, or motivation is appropriate and enhances the overall instructional design.	☐ When two or more technologies are combined, the result must be to increase significantly the learning experience over that attained from the use of one technology alone, avoiding programs which may combine many technologies simply for the effect of having more "bells and whistles."	☐ Learners are encouraged to locate and use additional print and non-print materials.
CD ☐ Keyboard templates, guides, labels, and/or displays are provided to assist the user.		
	CIVD ☐ Program can be used effectively at lower interactive levels than originally designed, i.e., a good Level III package should also be usable at Level I.	CIVD ☐ Program contains well-developed, educationally-sound sample sequences for teacher use. CIVD ☐ Well developed pre-programmed sequences are available to help beginning users. CIVD ☐ Varied levels of use can range from simple, frame-by-frame access to the creation of sophisticated individualized instructional units. CIVD ☐ Teachers easily can create effective interactive lessons, programs, and units with a minimum of preparation time. CIVD ☐ Students can easily create interactive reports and class presentations. CIVD ☐ Program design allows repurposing with authoring software. CIVD ☐ Multiple audio channels are used effectively — either for stereo, multiple languages, or presentations of information at multiple levels of difficulty.

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INSTRUCTIONAL DESIGN (continued)

PRESENTATION DESIGN

Essential	Desirable	Exemplary
☐ Users can easily and independently operate the program.	☐ Users at all levels can easily and independently operate the program.	☐ Learners find operation of the program to be intuitive and commands seem to be transparent.
☐ Learner control program operation and are actively involved in the learning process.		
☐ Instructions are clear, concise, and complete.	☐ Help screens provide clear, understandable explanations for all aspects of program.	
☐ Learners can bypass instructions at will.		
☐ Learners can exit from the program easily.		
☐ Introductory screens, including company logo and copyright statements, are kept to a minimum and/or can be bypassed by repeat users.		
☐ Program entry points are varied and are appropriate for the program.		
☐ Menu choices are logical and are displayed clearly		
☐ Menus and icons allow direct access to specific parts of the program.	☐ Icons, navigational commands, or other prompts display choices expected at each step and are highlighted as appropriate.	
☐ Any icons used are logical, easily understood, and represent metaphors from the real world whenever possible.	☐ Interactive strategies are straight forward and clear, allowing learners to focus on the instructional concepts rather than on the mechanics of the program.	
☐ Simple commands allow the learner to navigate throughout the program.	☐ One designated key is used consistently throughout to return users to a previous menu.	☐ A mouse or other non-keyboard control is recognized and supported by the program.
☐ Computer commands are consistent throughout the program.		
☐ Computer commands conform to any emerging industry standards.		☐ As technology allows, the program accepts open-ended, natural language input.
☐ Any error messages are simple, explicit, and helpful.		
☐ Function keys are used effectively and consistently.		
☐ The teacher or the learner determines the pace at which the user moves through the program.		
☐ The learner can alter responses before they are processed, unless instructional objectives dictate otherwise.		☐ The learner can go back through the program at will to review responses and content.
☐ Screens are well designed.	☐ Screen designs are aesthetically pleasing.	
☐ Screen displays are uncluttered and easy to read.		
☐ The user interface is consistent throughout the program.		
☐ Colors are selected for maximum discrimination when used on non-color screens.		
☐ Maps, graphs, and other illustrations are easy to read and simple to interpret.		

INSTRUCTIONAL DESIGN (continued)

PRESENTATION DESIGN (continued)

Essential	Desirable	Exemplary
☐ Any lengthy textual sequences can be printed to be read off-line.		
☐ In programs requiring lengthy text, the amount displayed on screen and the style of the display is appropriate for the intended user.		
☐ The printing function uses simple commands and a minimum number of keystrokes.		
☐ When appropriate, the program allows the user to save and/or printwork in progress.		
☐ Any accent or dialect supports the instructional design, purpose, and content of the program.		
☐ For commentary in any language, the grammar is correct and the pronunciation is clear and easily understood.		
☐ Use of color is effective and is designed for a specific purpose, e.g., to highlight a search term, to draw the eye to a prompt, or to display an error message.	☐ Audio and visuals are outstanding in quality. ☐ Guides, labels, and/or computer displays are provided to assist the user.	☐ Audio and visuals are aesthetically pleasing.
☐ Appropriate use is made of motion or live action sequences and stills images.		☐ Video sequences can be played at different rates of speed or backwards and forward.
CD ☐ Command sequences or icons are consistently displayed in standard panels or pull-down menus.		CD ☐ Search software is included on the CD-ROM rather than on a separate floppy disk.
CIVD ☐ Any non-narrated visual sequences are designed to enhance the production and set the mood.		
CIVD ☐ Motion sequences are paced appropriately for the program content.		
CIVD ☐ Any use of on-camera narration (talking heads), voice-over narration, dialog, and/or dramatization is designed to maintain student interest and involvement.	CIVD ☐ Graphics, icons, and instructional support materials for both the computer and video portions of the program clearly support and reinforce the basic instructional design of the program.	CIVD ☐ Graphics, icons, and instructional support materials for both the computer and video portions of the program have been carefully designed to have a similar "look and feel."
CIVD ☐ Any commentary complements and supports the visual material.	CIVD ☐ Closed-caption option is available.	CIVD ☐ Program authoring capability allows the user to create screen overlays that can be accessed via computer.
CIVD ☐ Pace of the narration is designed to maintain student interest and is suited to the content.		CIVD ☐ Program authoring capability allows the user to develop a computer program to control the presentation of selected materials from the videodisc and to save the material for future presentations.
CIVD ☐ When appropriate, a balance of male and female voices is used.		

INSTRUCTIONAL DESIGN (continued)

INTERACTIVITY

Essential	Desirable	Exemplary
CIVD Indexing is thorough, simple to use, and accurate.	CIVD An on-disc chapter directory to the contents of the entire program is available at the beginning of each side of all videodiscs.	CIVD There is a comprehensive print index to all resources on the videodisc.
CIVD Program provides well-indexed, specific access to audio sequences, motion sequences, instructional segments, and other resources on the videodisc.	CIVD Computer-controlled indexing provides rapid access to any individual frame, chapter stop, time, audio sequence, motion sequence, or other instructional segment when the product is used on hardware components recommended by the producer.	CIVD The computer program contains a comprehensive online index to all the resources on the videodisc.
	CIVD Frame and chapter stops are strategically placed for program use.	CIVD Interactive strategies are straightforward and clear allowing users to focus on the instructional concepts rather than on the mechanics of the program.
	CIVD There is appropriate choice of barcoding, remote control, computer, or other access.	
	CIVD When appropriate, easily-interpreted computer menus and/or icons provide direct access to specific parts of the program.	CIVD Maps or other navigational devices make it clear where the user is in the program at any given time, tracks where the user has been, and offers options for subsequent choices.

SEARCH STRATEGY SOFTWARE FOR REFERENCE TOOLS

Essential

- CD Choice of search modes is appropriate for level/interest of student.
- CD Browse, menu, and command search modes are available as appropriate.
- CD Multi-word phrases can be searched with ease.
- CD Any Boolean operations are clearly and properly identified.
- CD Search entry points are varied and appropriate for the program.
- CD User can search all appropriate fields.
- CD Search terms are highlighted as appropriate within retrieved records.
- CD Any fill-in-the-blank search entry screens provide clear instructions.
- CD Indexing is thorough and accurate, i.e., text, illustrations, sounds, etc.
- CD Search path can be reviewed.
- CD Information on the screen indicates when a search begins and when it has ended.
- CD It is simple to backtrack one step at a time through the search.
- CD Results of searches can be saved to disk.
- CD There are easy techniques for printing relevant search data.
- CD Student searching of any online version of the database, if supported by the software, can be controlled and monitored by the instructor.
- CD For periodical indexes, search can be limited by year, date, journal titles, etc.
- CD Products from the same publisher have a consistent command structure, but do not display commands for functions not available on a specific product.

Desirable

- CD A new user can begin using the program effectively within two to five minutes.
- CD The search software makes it possible for students to access materials and concepts at earlier grades than would be possible with materials in traditional print formats, i.e., access with keywords.
- CD The search strategies are so transparent that users can focus on the informational content or task rather than on the mechanics of searching.
- CD The design of the search strategy encourages students to use higher order thinking skills.
- CD When appropriate, search screens use visual/graphical icons or images.
- CD User's manual includes sample search screens at varied levels of complexity.
- CD Search path can be repeated as needed.
- CD Downloading function uses simple commands and a minimum number of keystrokes.
- CD True Boolean searching and/or non-Boolean relational search strategies are fully supported.
- CD Results of searches can be downloaded into and manipulated with word processing, spreadsheet, and/or database management software.
- CD User can specify display format and sequence for data to be viewed, printed, and/or downloaded.
- CD Print request informs the user of the total number of pages before printing.
- CD Password protected teacher option to monitor number of pages printed by each user.

Exemplary

- CD There is a graphical user interface for search strategy.
- CD There are hypertext-like linkages between related references, images as well as text.
- CD User can manipulate and sort data on-screen.
- CD Searches can be saved, recalled, and edited as appropriate for future use.
- CD Feedback is given on the progress of the search.
- CD There are flexible print options for sorting, formatting, and selecting the number of screens/citations.
- CD Graphic images can be saved to disk (if hardware supported).
- CD Graphic images can be printed (if hardware supported).
- CD When appropriate, there is easy access to any online version of the database.
- CD An on-screen notebook is available to support student searches, and is designed for easy disk maintenance.
- CD Results of searches can be preformatted for downloading into specific applications software.
- CD System manager can set printing parameters, including page breaks.

INSTRUCTIONAL DESIGN (continued)

TEACHER SUPPORT

Essential	Desirable	Exemplary
☐ A description of program content is provided.	☐ Objectives or skills to be acquired or practiced are identified.	☐ All or most of the following teaching materials are provided: teacher's guide with objectives and suggested grade levels, learners' materials, and/or transparency masters, posters, sample activities.
☐ A program marketed for a range of grades provides suggestions for using the program at varying grade levels.	☐ When appropriate, an estimate of time needed for classroom use is given.	☐ There are suggestions for a broad range of classroom applications, for integrating the program into one or more subject areas, and for using the program in various subject areas.
☐ Any student materials are appropriate for the grade level and reading level of the intended users.	☐ Suggested classroom activities are consistent in quality and tone with the program and with other instructional support materials provided.	☐ There are demonstrations or models of a variety of instructional applications in different settings and with groups of different sizes.
		☐ There are suggestions for using the program with Limited-English-Proficient students and language acquisition stages are identified.
		☐ When appropriate, print materials in one or more non-English language are provided.
☐ A list of any equipment or materials required for use with the program is provided as needed.	☐ There is a list of any books, equipment, additional resources, or reference materials required or recommended for use with the program.	☐ Suggestions for additional resources and reference materials are provided.
		☐ Models for learning assessment and/or results of classroom field tests are included.
☐ Teacher support materials and instructions for using the program are provided as needed.	☐ Appropriate teacher support materials are available.	☐ The teacher's guide provides some pedagogy or philosophy about why this technology is especially good for the proposed use.
	☐ Any teacher support materials are well written, easy to understand, and well illustrated.	
☐ There is a user's manual and/or an on-screen tutorial.	☐ Descriptions of program segments with representative program screens are provided.	
	☐ The user's manual is indexed thoroughly and arranged in a logical manner.	
	☐ When appropriate, there is an on-screen tutorial.	
		☐ CD Software permits recording of user statistics which can be retrieved easily in a variety of formats; includes number of pages printed by each user.
		☐ CIVD Print materials and/or the computer program provide storyboard forms and/or guide for teachers and students to use in creating their own sequences.
		☐ CIVD Instructions are available for making a videocassette copy of a segment from the videodisc for classroom presentation when permission to do so is granted by the producer.

CONTENT

Essential

- ☐ The program is without cultural, gender, or racial bias in content and format.
- ☐ When appropriate, there is representation of the diversity of the California population.
- ☐ The content is presented impartially and without bias or distortion.
- ☐ Any inherent bias is clearly identified and is necessary to the program design.
- ☐ All information is current, thorough, relevant, and if appropriate, is frequently updated.
- ☐ All content is factually accurate, including style, usage, formulae, calculations, etc.
- ☐ All grammar and spelling are correct.
- ☐ Reading and vocabulary levels are commensurate with skill level of intended users.
- ☐ The content is appropriate to student needs, curriculum area, purpose, and grade level.
- ☐ The program content supports the objectives stated in the written materials.
- ☐ Any motivational devices are appropriate to the content and skill levels being taught and are of reasonable duration.
- ☐ Where simulations are used, the models are valid and data accurate.
- ☐ Where simulations are used, the models are neither over simplified nor too complex for the developmental level of the intended user.
- ☐ Content is consistent with product advertisements.
- CD ☐ The content provides a sufficient quantity of information to be useful.
- CD ☐ Indexing terms are appropriate and are commensurate with skill level of intended users.
- CD ☐ For reference books, the full text is available on the CD-ROM.
- CD ☐ For periodical indexes, the periodicals selected are appropriate for intended users.
- CD ☐ For periodical indexes, updated versions are received within a reasonable time period.
- CD ☐ For periodical indexes, citation format is understandable and fields are clearly labeled.
- CD ☐ For periodical indexes, any subject headings are consistent and are controlled via an authority file.

Desirable

- ☐ The program utilizes examples that encourage students to explore roles they may not traditionally have considered.
- ☐ Content is selected to stimulate curiosity and critical thinking, creative activities, cooperative group work, and/or problem-solving activities.
- CD ☐ When appropriate, indexes include phrases as well as single words.
- CD ☐ For periodical indexes, retrospective coverage is fully maintained when additional years are added, earlier years are still included on disc or are available on a separate retrospective disc at a resonable cost.
- CD ☐ For periodical indexes, a list of indexing terms/descriptors/subjects (thesaurus) is available on-screen and/or in print.

Exemplary

- ☐ The program provides career information related to the program content.
- ☐ Some textual and/or audio materials are presented in one or more non-English languages.
- ☐ The program promotes learning across disciplinary boundaries.
- ☐ The program content validates a student's knowledge or experiences and links these to program content.
- ☐ The program encourages students to work collaboratively.
- ☐ The program provides access to reference materials and resources not generally available in other media.
- ☐ The program encourages students to seek additional resources.
- ☐ New material has been created for this production that is not currently available in another format.
- CD ☐ For reference books, any pictures, maps or other visuals are available on the disc.
- CD ☐ For periodical indexes, titles available at school site can be indicated easily.
- CD ☐ For periodical indexes, full-text is available in microfilm or print at a reasonable cost as a supplement to the package.

CONTENT (continued)

Essential	Desirable	Exemplary
CD For periodical indexes, any abstracts accurately reflect the entire context of the original article and contain essential facts, statistics, and data.		
CD Length of citations/abstracts/articles is appropriate to skill level of intended users.		

INTEREST

Essential	Desirable	Exemplary
☐ The interest level is well-suited to the learner.	☐ The program actively engages the learner.	☐ As appropriate, the program provides for various learning modalities, e.g., auditory, kinesthetic, and/or visual.
☐ Visuals are used effectively to motivate students.	☐ The content and format are designed to stimulate student curiosity and imagination.	☐ The program provides an intellectual challenge and/or encourages creativity on the part of the learner.
☐ Audio is used effectively to motive students.	☐ Students are eager to use the program repeatedly and to share it with their friends.	☐ Students are motivated to pose problems, define problems, and explore multiple solutions.
☐ When used with recommended hardware, access to program segments is rapid enough to keep students from becoming distracted or from losing interest.		

TECHNICAL QUALITY

AUDIO

Essential

- ☐ Any narration, dialog, and background sounds/music are clear.
- ☐ The audio level is consistent throughout the program.
- ☐ Any digitized speech is clear and easy to understand.
- ☐ Any digitized music is reproduced accurately and clearly.
- ☐ The volume of any background sounds or music enhances rather than detracts from the production.
- ☐ Any available audio can be controlled by user and/or headset can be used.
- CIVD ☐ There is complete synchronization of narrative with the visuals.

Desirable

- ☐ The program has high-quality stereo reproduction and sound separation.

Exemplary

- CIVD ☐ Users can separate audio segments from the video images when creating presentations or projects.

VISUAL

Essential

- ☐ All visual presentations are clear and easy to read/interpret.
- CIVD ☐ Exposure and contrast are correct.
- CIVD ☐ Motion and still visuals are sharp and in focus.
- CIVD ☐ Still frames are frozen with no distracting jitter, vertical or horizontal vibration.
- CIVD ☐ All motion sequences are filmed at 30 fps to eliminate interfield flicker.
- CIVD ☐ Stock footage is clean and free of splices.
- CIVD ☐ Only edit masters are used for film to videodisc transfers.
- CIVD ☐ Cropping of visual images is accurate.
- CIVD ☐ Transfer of images to videodisc is exact, i.e., images are cropped appropriately.

Desirable

- ☐ All colors are vivid and provide an accurate representation within the limits of the display.
- ☐ All motion sequences flow smoothly when the product is used on hardware components recommended by the publisher or producer.
- ☐ The quality of any visuals is as good as the resolution of the equipment used will permit.
- ☐ Any zoom function displays the enlarged or reduced images in clear detail.
- CIVD ☐ Visual effects (wipes, dissolves, cuts) enhance production.

Exemplary

- CIVD ☐ Multiple points of view are provided for the same visual.
- CIVD ☐ Original images have been created specifically for the interactive medium.
- CIVD ☐ Program uses state of the art computer graphics.

TECHNICAL QUALITY (continued)

PROGRAM OPERATION

Essential	Desirable	Exemplary
☐ Program and all components operate effectively and without error.	☐ Program installation requires a minimal level of computer expertise.	☐ Versions are available for multiple operating systems.
☐ Program is reliable in normal use.	☐ Staff time required for maintenance is reasonable.	☐ Data compression keeps the number of disks to a minimum.
☐ Instructions for operation are simple and complete.	☐ Access speed is fast enough to maintain student interest when the product is used on hardware components recommended by the publisher or producer.	
☐ All components conform to any emerging industry standards.		
☐ Program operates on "industry standard" equipment.		
☐ Unanticipated input does not disrupt program use.		
☐ When appropriate, the program recognizes the absence or a problem with periphrals, and delivers appropriate messages to continue operation.		
CIVD ☐ Access to videodisc frames is accurate, with precise "hits" in response to user input.		CIVD ☐ Computer software to accompany the videodisc is available for a variety of computers and videodisc players.
		CIVD ☐ The producer has done the best possible job considering the limitations of the hardware.

OPERATIONAL SUPPORT/DOCUMENTATION

Essential	Desirable	Exemplary
☐ All required hardware components are clearly listed in simple and explicit language in both the advertising and the documentation.	☐ Packaging is sturdy and fits onto standard shelving.	
☐ Packaging clearly states minimum hardware requirements for optimal use.		
☐ Any required drivers, software, or peripherals (1) are included in the package, or (2) are readily available as specified in the advertising and in the documention.		
☐ There are clear directions, with diagrams as needed, for installing any add-on equipment, e.g., probes, voice synthesizer.		
☐ For computer software components, there is a backup disk or a procedure for making one.	☐ Labels for all materials are clear, e.g., MAC, MS-DOS, Windows, etc.	
☐ A full refund is made for any product that fails to operate as described in the documentation or advertising.	☐ Free or inexpensive updates of software are provided as new versions become available.	☐ A damaged or stolen product is replaced at nominal or no cost.

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TECHNICAL QUALITY (continued)

OPERATIONAL SUPPORT/DOCUMENTATION (continued)

Essential

- ☐ There are clear directions for installing the software, e.g., transfer to hard disk, initialization of file or learner word disks; or there are references to installation procedures in the appropriate hardware documentation.
- ☐ There is a hotline for technical support and other customer service.
- ☐ For programs with networking capabilities, clear instructions for installation and operation are provided, or references to installation procedures in the hardware documention are made.

Desirable

- ☐ Site-licensing agreements permit users to make multiple copies of software or provide multiple copies at reduced prices.
- ☐ When appropriate, provide dealer support and/or on-site training to school staff at nominal or no cost.
- ☐ There is readily available teacher help such as a free information hotline or 800 number for service.
- ☐ Network licensing agreements are available for network-compatible software that permit placing the software on a hard disk for access by multiple computers.

Exemplary

- ☐ For more complex programs, demonstrations are provided at the school site and/or the product all required hardware can be obtained on loan for a trial period.
- ☐ For more complex programs, a list of current users who may be contacted regarding the product is available.
- ☐ A network version is available.

- CD ☐ Product runs effectively in a network environment.
- CD ☐ Network version is provided at a reasonable charge.
- CD ☐ A workstation is provided for a limited time if needed at the site for preview of periodical index CD-ROM.
- CD ☐ A network compatible version and licensing agreements that permit placing the CD-ROM on a network server are available.
- CD ☐ There is no requirement that the CD-ROM be returned when an update is received, particulary for periodical indexes.
- CD ☐ Subscription price for periodical indexes is reasonable when compared with an annual print subscription.
- CD ☐ Special pricing is offered for CD-ROM product when combined with the same product in print.
- CD ☐ A workstation is available at a reasonable cost as part of the subscription/purchase price.

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STANDARDS for EVALUATION of INSTRUCTIONAL MATERIALS
with RESPECT to SOCIAL CONTENT, 1986 Edition
California State Department of Education
(Education Codes 60040 - 60044)
Abbreviated Edition

Technology resources must comply with these standards. Evaluators must reject programs which contain demeaning labels or role stereotyping. Other criteria in each of the categories must be addressed when appropriate. Note: it may be inappropriate to apply these criteria when examining classical or contemporary literature, music and art, stories or articles having a particular historical or cultural perspective.

MALE/FEMALE ROLES

- No demeaning labels or role stereotyping
- Equal illustrations of male/female figures
- Equal portrayal in occupations and range of career opportunities
- Equal presentation of male/female contributions and achievements
- Equal representation of males/females in mental and physical activities
- Balance of traditional and non-traditional roles
- Equal representation of similar emotions in males/females (i.e., fear, aggression, tenderness, etc.)
- Neutral language (i.e., people, persons, men and women, they) preferred

ETHNIC AND CULTURAL GROUPS

- No demeaning labels or stereotyping of minorities
- Displays a fair proportion of diverse ethnic groups
- Differences in customs must not be depicted as undesirable
- Displays minorities in professions
- Shows same socioeconomic ranges for different groups
- Presents minority contributions and achievements
- Equal representation of mentally active, creative roles
- Balance of traditional and non-traditional roles
- Depiction not limited to root culture, but also mainstream of group in U.S.

OLDER PERSONS AND THE AGING PROCESS

- No demeaning labels or stereotyping of older persons
- Displays balanced representation of older persons when illustrating human activities
- Balanced presentation of older persons with persons of all ages in mental and physical activities
- When appropriate, aging pictured as continuous process spanning entire lifetime

DISABLED PERSONS

- No demeaning labels or stereotyping of disabled persons
- Displays balanced representation of disabled persons when illustrating human activities
- Balanced presentation of disabled persons with persons of all ages in mental and physical activities
- Emotions depicted randomly among characters regardless of ability or disability
- Contributions and achievements of disabled persons depicted, especially when biographies are presented

ENTREPRENEUR AND LABOR

- No demeaning or stereotyping of occupations or vocations
- Where appropriate, reference is made to role of both entrepreneur and labor in development of California and U.S.

RELIGION

- No religious practice or belief ridiculed
- Religion, when presented, is presented in objective, non-indoctrinating manner
- Religious diversity reflected in portrayals of contemporary U.S. society

ECOLOGY AND ENVIRONMENT

- Interdependence of people and their environment portrayed
- Appropriate responsibilities of people for creating and maintaining healthful environment portrayed
- Wise use of human and physical resources encouraged

DANGEROUS SUBSTANCES

- Use of dangerous substances not glamorized
- Hazards of use of tobacco, alcohol, narcotics, and restricted dangerous drugs

THRIFT, FIRE PREVENTION, AND HUMANE TREATMENT

- Waste discouraged
- Practices constituting fire hazards not condoned or encouraged
- Inhumane treatment not condoned or encouraged
- Thrift encouraged
- Fire prevention explained and encouraged
- Humane treatment encouraged

DECLARATION OF INDEPENDENCE AND U.S. CONSTITUTION

- These documents should be included in instructional materials for history and social science classes when appropriate for comprehension of students

BRAND NAMES AND CORPORATE LOGOS

- Omit illustrations unless necessary to educational purpose or incidental to scene of general nature
- No prominent use of any one depiction
- Refer to soft drinks generically
- If "fast food" restaurants necessary, use several
- Recreational areas may be mentioned when part of contemporary childhood culture
- Inclusion of corporate names necessary only in very narrow context
- Auto names may be used if fair sampling of different names appear

DIET AND EXERCISE

- Emphasizes foods of high nutritive value
- Emphasizes the value of regular exercise

CONSUMER AWARENESS ISSUES

The consumer awareness issues listed below are important to all California educators involved in the evaluation and acquisition of interactive technology resources. They represent practices that many publishers, producers, and distributors have established as marketing policy in an effort to make high-quality interactive technology resources available to California schools. Educators purchasing these resources are urged to determine which of these policies have been implemented by the publishers, producers, and distributors with whom they do business.

A parallel issue is that of copyright protection. The California State Board of Education has endorsed and published the *Suggested Copyright Policy and Guidelines for California's School Districts* (1991). That document states, "In the absence of clearly granted rights, it is recommended that educators contact the copyright holder in writing for permission to manipulate or use these technologies in alternative ways. This course of action will ensure compliance with the spirit and the intent of the copyright law as it applies to the role of electronic information and its transfer and use." The California Department of Education distributed copies of this policy to all districts in California and recommended that each district adopt it or a similar policy. Districts that have such a poicy in place may well have an advantage in negotiating licensing agreements with publishers, producers, or distributors.

Educators are urged to expect that their publishers, producers, and distributors will do the following:

- Provide free preview of all components including documentation.
- Provide clear and adequate documentation for program operation.
- All required hardware components are clearly listed in simple and explicit language in both the advertising and the documentation.
- Provide a full refund for any product that fails to operate as described in documentation or advertising.
- List all cables, extensions, controller cards, systems, etc., required for program operation.
- Provide an explicit statement of the producer's policy regarding permission to load a single copy of the computer software on multiple computers for use at the same time.
- Provide licensing agreements that permit users to make multiple copies of computer software or that provide multiple copies at a reduced cost.
- Provide a network compatible version of program with a licensing agreement that permits placing the computer software on a hard disk for access by multiple computers.
- Recognize the need to provide free loan of lab packs/multiple copies of software for use in training sessions.
- Provide backups for any computer disks or a procedure for making backups.
- Replace damaged materials at nominal or no cost.
- Provide free or inexpensive updates as new versions become available.
- For extensive multi-grade programs, develop a preview disk with at least one complete interactive segment for each grade level; include sample documentation for each level.
- Provide adequate teacher support materials and training.
- Accomodate a minimum of forty students in any record-keeping component included with the software program, and protect the records from unauthorized access.
- Provide multiple sets of consumable materials at reasonable cost or permission to reproduce masters included with the program.

- Make an explicit statement granting permission for teachers to take the software home.
- Make an explicit statement granting permission for students to take the software home, if this is the publisher's policy, and include a sample "letter to parents" that explains the copyright policy involved.
- Provide a method for soliciting recommendations for the improvement of a program and offer incentives for suggestions that are incorporated into subsequent versions.
- For computer-interactive videodisc, respond favorably to written requests for permission to record selected videodisc images and sound onto videocassette for classroom use by students and teachers.